

1. Simplify fully

$$\frac{x^2 - 3x}{x^2 - 8x + 15}$$

.....

(3)  
(Total 3 marks)

2. (a) Simplify  $\frac{20a^2}{4ab^2}$

.....

(2)

(b) Simplify  $\frac{x-3}{x^2-9}$

.....

(2)  
(Total 4 marks)

3. Simplify fully  $\frac{4a-20}{a^2-25}$

.....

(Total 3 marks)

4. Simplify  $\frac{x^2 + 5x + 6}{x + 2}$

.....  
**(Total 2 marks)**

5. Simplify  $\frac{4x^2 - 9}{2x^2 - 5x + 3}$

.....  
**(Total 3marks)**

6. Write as a single fraction  $\frac{4}{x(x+3)} + \frac{5}{(x+3)}$

.....  
**(Total 2 marks)**

7. Write as a single fraction in its simplest form

$$\frac{4}{x+5} + \frac{1}{x-3}$$

.....  
**(Total 4 marks)**

8. Simplify fully

$$\frac{3(2x+1)}{4x^2-1}$$

.....  
**(Total 2 marks)**

9. Solve the equation

$$\frac{x}{2x-3} + \frac{4}{x+1} = 1$$

$$x = \dots\dots\dots$$

**(Total 5 marks)**

10. Simplify fully  $\frac{3x+6}{x^2-4}$

$$\dots\dots\dots$$

**(Total 3 marks)**

11. Solve the equation

$$\frac{3}{x+3} - \frac{4}{x-3} = \frac{5x}{x^2-9}$$

$$x = \dots\dots\dots$$

**(Total 4 marks)**

12. Solve  $\frac{5(2x+1)}{3} = 4x+7$

$$x = \dots\dots\dots$$

**(Total 3 marks)**

13. Simplify

$$\frac{6x^2 + 7x - 3}{9x^2 - 6x + 1}$$

.....

(3)  
(Total 5 marks)

14. (a) Solve  $\frac{40-x}{3} = 4 + x$

$x = \dots\dots\dots$

(3)

(b) Simplify fully  $\frac{4x^2 - 6x}{4x^2 - 9}$

.....

(3)  
(Total 6 marks)

15. (a) Solve  $\frac{3}{x} + \frac{3}{2x} = 2$

$x = \dots\dots\dots$

**(2)**

(b) Using your answer to part (a), or otherwise,

solve  $\frac{3}{(y-1)^2} + \frac{3}{2(y-1)^2} = 2$

$y = \dots\dots\dots$

or  $y = \dots\dots\dots$

**(3)**

**(Total 5 marks)**